WHAT IS CLAIMED IS:

1. A call admission control method for Internet Protocol (IP) Differentiated Services (DiffServ) network having at least one node for interpreting signaling messages and controlling traffic load in the network, comprising:

an initialization and a real-time phase and steps of

determining whether descriptor of a traffic class changes;

invoking the initialization phase if descriptor of a traffic class changed;

said initialization phase comprises the steps of:

computing the coefficients of approximating hyperplanes;

storing the coefficients of approximating hyperplanes;

said real-time phase comprises the steps of:

determining whether stability constraint is fulfilled;

determining whether delay constraint is fulfilled;

admitting a traffic mix if for each real-time traffic class both the stability and the delay constraints are fulfilled;

rejecting a traffic mix if for each real-time traffic class either the stability or the delay constraints are not fulfilled.

2. The call admission control method of claim 1 wherein IP-based network is a Universal Mobile Telecommunication System Terrestrial Radio Access Networks (UTRAN) comprising at least one base station and a Radio Network Controller (RNC).

3. The call admission control method of claim 1 wherein the steps of initialization phase is repeated if descriptor of a traffic class changes.

4. The call admission control method of claim 1 wherein the steps of determining the stability constraint and the step of determining the delay constraint are performed simultaneously.

5. The call admission control method of claim 1 wherein the steps of computing the coefficients of approximating hyperplanes includes the steps of calculating the arrays of:

the number of approximating hyperplanes for each real-time class i;

the effective bandwidth value for each class j session expressed in number of each class i sessions in scheduling model M;

the maximal number of each class i sessions in scheduling model M if no ongoing sessions from other classes are present;

the capacity share of each real-time queue q if each other real-time queues are empty.

6. The call admission control method of claim 1 wherein the step of determining whether stability constraint is fulfilled includes evaluating the number of lost packets and comparing it to the tolerated packet loss ratio for each class in that queue.

7. The call admission control method of claim 1 wherein the step of determining whether delay constraint is fulfilled includes checking if the traffic mix is below at least one of the approximating hyperplanes in the space of number of sessions for each class.

8. The call admission control method of claim 1 wherein the step of determining whether delay constraint is fulfilled comprises the steps of:

determining whether each traffic class is checked;

selecting the next traffic class if not each of traffic class is checked;

determining whether each hyperplane of that traffic class is checked;

selecting next hyperplane if not each of hyperplanes of that traffic class is checked;

determining whether N is below of that hyperplane, where N is a vector defining the number of sessions is each traffic class.

9. A call admission control system for Internet Protocol IP DiffServ network having at least one node for interpreting signaling messages and controlling traffic load in the network, comprising functions for:

determining whether descriptor of a traffic class changes;

computing the coefficients of approximating hyperplanes;

storing the coefficients of approximating hyperplanes;

determining whether stability constraint is fulfilled;

determining whether delay constraint is fulfilled;

admitting a traffic mix if for each real-time traffic class both the stability and the delay constraints are fulfilled;

rejecting a traffic mix if for each real-time traffic class either the stability or the delay constraints are not fulfilled.

10. The call admission control system of claim 9 wherein the stability check function estimates the loss ratio and compares the minimal allowed tolerance level in the queue;

11. The call admission control system of claim 9 wherein the delay check function compares the scalar product of the traffic mix vector and the normal vector of the hyperplane to the array of the effective bandwidth value;

12. The call admission control system of claim 9 where IP DiffServ network is a Universal Mobile Telecommunication System Terrestrial Radio Access Networks (UTRAN) comprising at least one base station and a Radio Network Controller (RNC)

13. A node for interpreting signaling messages and controlling traffic load in the network comprising means for:

determining whether descriptor of a traffic class changes;

computing the coefficients of approximating hyperplanes;

storing the coefficients of approximating hyperplanes;

determining whether stability constraint is fulfilled;

determining whether delay constraint is fulfilled;

admitting a traffic mix if for each real-time traffic class both the stability and the delay constraints are fulfilled;

rejecting a traffic mix if for each real-time traffic class either the stability or the delay constraints are not fulfilled.

14. The node of claim 13 wherein interpreting signaling messages and controlling traffic load is implemented in a Radio Network Controller (RNC).

15. The node of claim 13 wherein interpreting signaling messages and controlling traffic load is implemented in base stations.

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